

Review on Knowledge Sharing Behavior Studies: Theories and Research Approaches

Jamilah Mahmood*, Halina Mohamed Dahlan, Ab Razak Che Hussin and Muhammad Aliif Ahmad

Department of Information System, Faculty of Computing, University Technology Malaysia, Johor Bahru, Malaysia;
mahmoodjamilah@gmail.com, halina@utm.my, abrazakutm@gmail.com, maalif.ahmad@gmail.com

Abstract

Objectives: There are still less empirical research that has been conducted regarding individual issues that shape behaviors, intentions, attitudes and beliefs in knowledge sharing. However, in order to proceed the study on examining the knowledge sharing behavior, it is important to first analyze the most suitable research approaches and theoretical framework that can be used in this study. **Methods/Statistical Analysis:** This paper investigates the research approaches used for examining knowledge sharing behavior by reviewing 118 papers on regarding this topic which were retrieved from five online databases which are IEEE, Science Direct, Emerald, ACM Digital Library and Web of Science. **Findings:** This paper concludes that survey method is the most suitable research method for examining the knowledge sharing behavior. Most of the study uses a theory to explain the each factor that they found. The theories that were mostly used in the previous research were Theory of Planned Behavior and Theory of Reasoned Action. Result shows that there were insufficient studies on knowledge sharing behavior in education compared to other domain. Previous researches were mostly focusing on undergraduate and postgraduate student and there were limited studies on postgraduate student as the main subject. Thus by realizing this gap, a study on knowledge sharing behavior among postgraduate students is needed to solve the knowledge sharing behavior barriers found in the university context.

Keywords: Knowledge Sharing, Knowledge Sharing Behavior, Research Approaches, Theoretical Framework

1. Introduction

Knowledge sharing is the process of exchanging knowledge between people, community, organization or groups. Knowledge can be in the forms of experience, skill and understanding. Knowledge sharing can contribute to the successfulness of the firm¹. Knowledge shared among a group of members can also improve problem solving since each individual may have different expertise or knowledge and by sharing their knowledge can help others. However, there are many issues arise regarding the user behavior even though they are provided with such facilities of knowledge sharing system. The studies show that one of the most recent discussed topics in knowledge sharing is related to knowledge sharing behavior. Behavior is found as one of the factors that can leads to knowledge sharing²⁻⁴. The examples of the behavior explained in previous research were trust, subjective norms, expected rewards, enjoyment in helping others and perceived

behavioral control. The knowledge sharing behavior derived basically depends on the domains of the studies.

There are various domains to be considered in the study of knowledge sharing behavior such as industrial firm, university students, banking sector and many more. However before conducting any research, it is important to first select the most suitable approaches and method for the research. Defining the research approaches is an important task since it provides guideline about the activities that need to be performed to achieve the research's objectives. It helps researchers to identify their role in the research process, the research design and the process of data collection and also the analysis of the finding. There are three popular research approaches used in the information system, which are quantitative, qualitative, mixed method. Quantitative research is also called as positivist. The research conducted by using this approaches reflect a need to examine causes that influences outcomes or effects⁵. The approach to research

* Author for correspondence

by quantitative begin with a theory, data collection phase (which either support or disprove the theory), then proceed through a revision phase before additional test are conducted. The variables that compose hypotheses and research questions are used to narrow the idea into a smaller and discrete set of idea to test.

While qualitative research are the knowledge claimed from the set of assumptions and the understanding of the researchers⁵. Since the understanding on the specific subject were varied and multiple, this leads the researchers to expand the studies by looking for a broad views than narrowing it to a discrete set of idea. The research outcome will rely as much as possible from the respondents view of situation being studied. The type of questions used was an open-ended question so that the respondents can express their opinions and suggestion through the activity of discussion and interactions. This approach can also be called as interpretive as the researchers will make an interpretation from the information gathered. Another research approaches used in the information studies are mixed methods or also known as pragmatism. The knowledge of the research emerges out of actions, situations and consequences rather than the antecedents of conditions. It is important to focus on the research problem in social science research and then using pluralistic approaches to derive knowledge about the problem^{6,7}. Mixed method research used both quantitative and qualitative approach to collect and analyze data.

Besides examining the current approaches used in the knowledge sharing behavior studies, this paper also aims to analyze the selected studies from the perspectives of the theoretical framework, which is also closely related to the research goal. By analyzing the knowledge sharing behavior studies from year 2009 to recent, this paper aims to have a closer look on what and how the theories were used to achieve the research goal. The nature of theory in different compared to others discipline. In⁸ characteristics that distinguishes IS from other fields is that it concerns with the use of artifacts in human-machine systems. Thus in order to understand IS, the theory is required to link the natural world, the social world and the artificial world of human constructions⁸.

Besides, there is a number of different views of theory from the literature for example it is explain as the specification of universal statements in the form that enable them to be tested against observations of what occurs in the real word⁹ and as the evident for

the construction for technological artifacts¹⁰. The three criteria of the theory are 1. Construct must be identified, 2. Relationship among construct must be specified, 3. The relationship must be falsifiable (able to be tested)¹¹. Thus, in IS research, theory is used as the foundation of the research either as the way of testing the observation or to explain the outcome.

The paper begins by discussing about the process of how we identify the studies included in the review. The next two sections of the paper discuss the finding based on the research questions stated and the emerging issues of the knowledge sharing behavior studies.

2. Methodology

2.1 Research Questions

Research questions used in this paper are as follows:

RQ1: What is the research designs used in the previous research related to study of knowledge sharing behavior?

RQ2: What are the theory used in knowledge sharing behavior studies, and how?

RQ3: What research topics are being addressed in the knowledge sharing behavior studies?

2.2 Sample Selection

Before selecting the sample, the domain of interest for this research is carefully specified. The domain describes the disciplinary area in which the search is to be conducted. However, in order to have a broader view of how knowledge sharing behavior is analyzed in the previous research, the author decides to search and review the research regarding this topic in all domain to find the gaps in between the research that has been conducted. The keyword used for searching is "knowledge sharing behavior".

The best way to search in all domain area is by using online database because it can give the result at higher level. From this search, the author will find related articles that discuss the study on knowledge sharing behavior in all domain area. This can be done by using selected database to extract the relevant research articles or report by searching the title and abstracts with a pre-determined search term. The most effective way to select the sample is to search at higher level through available database since this study is not limited to the scope of any given

domain¹². The following databases that are commonly used in information system research are used for the searching; IEEE Explore, Science Direct, Emerald, ACM Digital Library and Web of Science.

2.3 Search Process

This study aims to find all the study regarding knowledge sharing behavior reported from 2009 to 2015. The number of studies retrieved from IEEE Xplore, Science Direct, ACM Digital Library, Web of Science and Emerald was 21, 35, 3, 27 and 32 respectively.

As shown in Figure 1, the paper was selected through four steps; first by using search term keyword “knowledge sharing behavior”, then the paper was filtered by using the inclusion and exclusion criteria. The paper are selected from year 2009 to 2015, only paper published in the recent years are selected because this review goal is to provide a comprehensive and up-to-date overview of the principle research about the topic being studied.

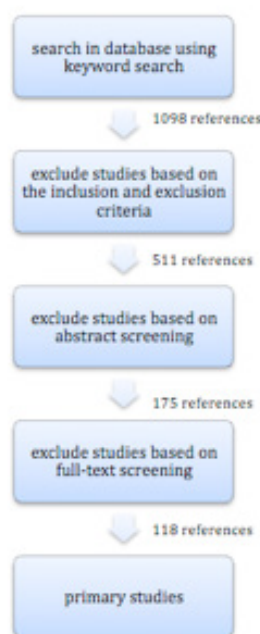


Figure 1. Search process.

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Studies that focus on knowledge sharing behavior Studies are published within 2015 to 2009
Exclusion criteria	Studies are not in English Studies that are not related to the research question Publication/reports for which only have an abstract or Power Point Slide available Duplicate studies

Next the studies was filtered based on abstract screening, finally the primary studies was selected after the full-text screening process. The primary studies found contain of 118 papers. The details of inclusion and exclusion criteria are listed in Table 1. The overview of search result is provided in Table 2.

Table 2. Number of selected studies

Online database	No. of re-trieved studies	No. of select-ed studies
IEEE Xplore	475	21
Science Direct	338	35
ACM Digital Library	22	3
Web of Science	111	27
Emerald	152	32
Total of studies	1098	118

3. Results and Discussion

In this section, we discuss the answers to our research questions.

3.1 What is the Research Methods used in the Previous Research Related to Study of Knowledge Sharing Behavior?

Since selecting the research approaches before conducting any research is very important, this research question aims is to provide a broad view on the type of research approaches used in the knowledge sharing behavior studies and to understand how the research is conducted in this area. This will help the researchers to select the most suitable research approaches to their studies based on the analysis they made on other research which is also may have the same research's goal. In IS research, there are three popular research approaches used which are positivist, interpretive and critical thinking. Research approaches is selected based on the goal of the studies.

Research approaches that were used in the knowledge sharing behavior studies found from the reviews were survey method, interview, mixed method (survey and

interview) and literature review. The most used research method in this research area is survey method with the highest percentage of (79%), followed by literature review (10%), mixed method (7%) and interview (2%). Figure 2.

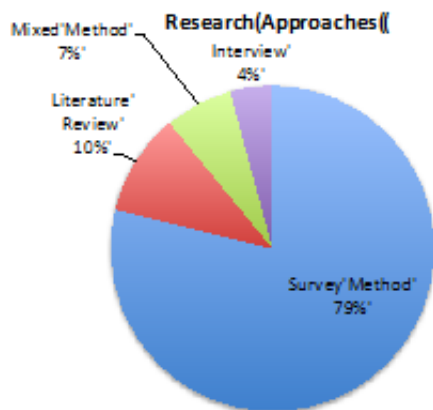


Figure 2. Research methods used in previous studies.

Since most of the purpose of the previous study were all about examining and measuring the factors of knowledge sharing behavior, so the survey method is the most suitable method for the research as it can provide a solid data to be analyzed. Survey method can be categorized in positivist research method. Questionnaire is used as the instruments to collect the data from the selected respondents. Questionnaire will consist of numbers of questions set with scalable choices of answers. Besides that, positivist research method can also include observations, measurements, instruments, laboratory and field experiments, statistical analysis, simulations and case study¹³.

There are (10%) from the studies selected were using literature review as the research approach. Most of the studies that used literature review were more focused on addressing the theory development and to advance the theoretical framework of knowledge sharing. In their paper they present the review of the selected theory such as Theory of Planned Behavior (TPB) and Theory of Reasoned Action (TRA). The results show the reviews of the TPB and its application to knowledge sharing and also the research direction that can guide inquiry to knowledge sharing. Besides that, this literature review approach was also used to analyze the knowledge sharing

based on the theory¹⁴. Basically, the study reviews the important factors that affect knowledge sharing behavior from the previous studies¹⁵.

Only a few of studies related to this knowledge sharing behavior used interview (qualitative methods). The review also shows that interview has the lowest percentage among other research methods, which is only (4%). This is because qualitative method is suited to advance theoretical insight to the phenomena that are embedded in a social context¹⁶. For example, in study shows that they select two organizations in order to illustrate the use of the Relational Model Theory and also to develop the theoretical explanations for the effective deployment of the model. In the qualitative method, besides the interview, the research also used observation report, field note and documentation in order to analyze their research finding

3.2 What are the Theory used in Knowledge Sharing Behavior Studies, and How?

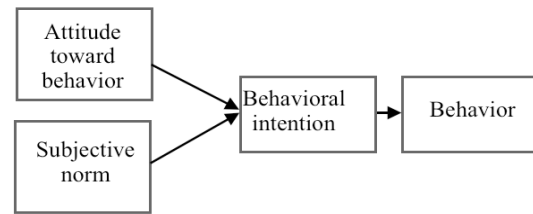
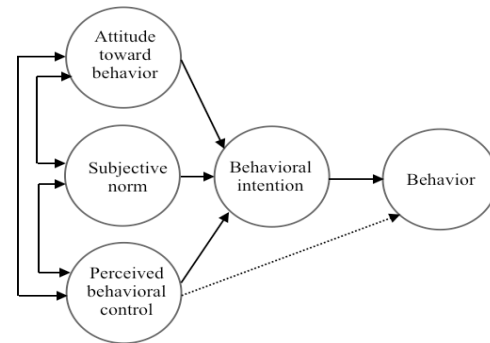
Most of the knowledge sharing behavior studies used explanation and prediction theory as the foundation of their research either in a way of testing the observation or explaining the outcome. Explanation and prediction theory provides predictions and has both testable propositions and causal explanations.

Furthermore, from this systematic literature review, the author also found that Theory of Planned Behavior (TPB) and Theory of Reasoned Action (TRA) were mostly used in the current research related to knowledge sharing behavior. TPB and TRA have the highest number of paper occurrence, which is 21 and 18 respectively. Besides, Social Exchange Theory (SET) with the number of paper occurrence 12 is also has been used by many researchers in this study. However, in this paper the author will only briefly explained on TPB and TRA. Table 3.

TPB is actually the extent from TRA. There are four constructs in TRA, which are attitude toward behavior, subjective norm, behavioral intention and behavior. While in TPB there is one construct added to TRA, which is perceived behavioral control¹⁷. Theory of Reasoned Action and Theory of Planned Behavior are as follows. Figure 3 and Figure 4.

Table 3. Theories used in knowledge sharing behavior study

Theory	Numbers of paper
Theory of Planned Behavior (TPB)	21
Theory Reasoned Action (TRA)	18
Social Exchange Theory (SET)	12
Social Cognitive Theory	11
Economic Exchange Theory	4
Game Theory	6
Social Capital Theory	3
Motivation Theory	2
Relations Model Theory	2
Technology Acceptance Model	2
Theory of Acceptance and Use of Technology (UTAUT)	2
Self-determination Theory	2
Theory of Knowledge Creation	2
Commitment Trust Theory (CTT)	2
Theory of Basic Human Values	1
Theory of IT-Culture Conflict	1
Cultural Historical Activity Theory (CHAT)	1
Triandis Model	1
Knowledge Based Theory	1
Psychological Engagement Theory	1
Theory of Social Support	1
Online Knowledge Sharing Model (OKSM)	1
Knowledge Sharing Behavior Model	1
Responsible Environmental Behavior Framework	1
Agency Theory	1
Organizational Control Theory	1
Incentive Theory	1
Information System Continuous Use Model (ISCM)	1
Plural Subject Theory	1
Regulatory Focus Theory	1

**Figure 3.** Theory of reasoned action.**Figure 4.** Theory of planned behavior.

Many evidences show that TPB predicted behavior quite well in comparison to the ceiling imposed by behavioral reliability. Social attitude and personal traits is used in predicting and explaining the behavior. Individual's intention is the central factor in this theory. Intentions are assumed to capture the motivational factors that influence behavior; they are the indication of how hard people are willing to perform the behavior; of how much effort they are planning to exert, in order to perform the behavior¹⁷.

Although some behavior can meet this relation, however the performance of most depends at least to some degree on such non-motivational factors as availability of requisite opportunities and resources for example money, time, skill and cooperation. Besides, this factor also had been discussed in the other field's issues such as animal learning, level of inspiration, performance on psychomotor and cognitive tasks^{18,19} and person perception and attribution and this factor also is addressed as "the context of opportunity", "resources"²⁰,

“facilitating factor”²¹ or “Action Control”²². This construct also explains individual’s perception on the ease or difficulty to perform the behavior. The investigations also shows that the individual confidence in their ability can strongly influence their behavior (e.g., by perceived behavioral control. Based on Ajzen explanation, self-efficacy belief also is also depicted as the synonyms of this construct. Perceived behavioral control may not be particularly realistic when a person has relatively little information about the behavior or when the requirements or the available resources have changed or when new and unfamiliar elements or resources have entered into the solutions.

Attitude toward behavior presents the degree to which a person has a favorable or unfavorable evaluation/appraisal of the behavior. According to this theory, attitude is developed from the belief individual hold about an object of the attitude. For this case, the belief (attitude towards behavior) linked with the behavior to a certain outcome such as the cost incurred by performing the behavior. It is about the consequences of performing the behavior multiplied by his or her evaluation of these consequences²³.

Subjective norm defines the perceived social pressure of user to perform or not the behavior. It is usually concerned with the likelihood that important referent individual or groups approve or disapprove of performing a given behavior. Subjective norm is seen as a combination of perceived expectations from relevant individual or groups along with attentions to comply with these expectations, or in other words “the person’s perception that most people who are important to him or her think he should or should not perform the behavior questions”²³. Organizational structure, procedures and rules, incentive systems, strategies, senior managers’ support are also the example of factors that can directly or indirectly affects the knowledge sharing behaviors of employers²⁴.

This construct relation also can be explained in other simple terms: An individual behavior is predicted by three main factors:

- By his attitude toward that behavior.
- By how he thinks other people view them if they performed the behavior.
- By availability of requisite opportunities and resources (e.g., example money, time, skill and cooperation).

The review shows that most of the study used TPB and TRA to construct the elements that impacts individual knowledge sharing behavior. The elements suggested are basically related to the area of the study.

3.3 What Research Topics are being addressed in the Knowledge Sharing Behavior Studies?

Results show that the number of studies related to knowledge sharing behavior were increased. The topics that were mostly discussed in revolved on the factor of social capital influencing knowledge sharing behavior. This social factor is also addressed as social context, social motivations, social participation, social influences and social relationship. This topic highlighted that it is important for individual to have a good social relationship with other members in order to allow them to share knowledge comfortably. This is also related to their degree of the social network ties and trust. The higher the trust value they have on others members, the higher the possibility of individual to share knowledge. Figure 5.

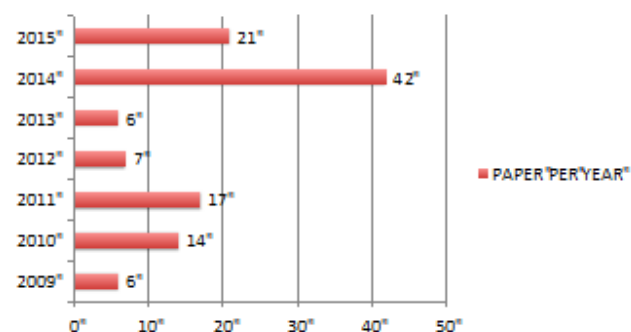


Figure 5. Numbers of paper retrieved by year.

Besides, there were also many other factors found that can influence user’s knowledge sharing behavior such as organizational culture, team social capital, trust, social norm, perceived expectation, perceived risk, empowering leadership, ethics, motivation and organization support. Those factors were identified based on the context of the studies.

Research topic from the previous studies can be categorized into many context which are industrial, education, social networking sites, healthcare, research and development, disaster management and banking.

The percentage shows that research topic regarding the knowledge sharing behavior area were more focus at the industrial, which it hold (64%) from the overall topic found. That describes that they were aware of the importance of knowledge to the industrial firm and they had initiated an action to analyze the barriers in order to improve knowledge sharing among their employees. Figure 6.

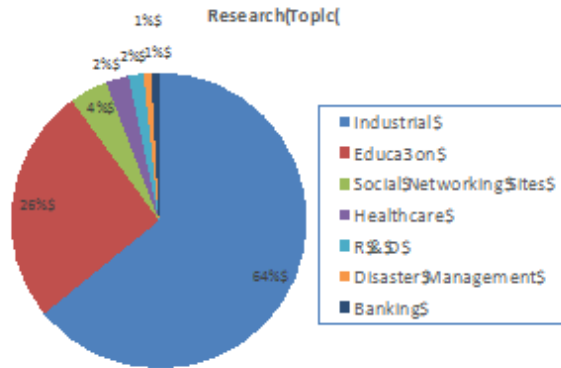


Figure 6. Receiver heat losses.

Besides, the figure shows 26% of the topics found were on education sector. It shows that the number of knowledge sharing behavior studies on education context is still limited compared to industrial sector. Although researchers are fully aware of the importance of knowledge sharing among student, there were still insufficient studies on knowledge sharing behavior in higher education sector²⁵. The previous research related to the knowledge sharing behavior of student that has been conducted were mostly focus on both undergraduate and postgraduate students. In the real situation, postgraduate students are actually has experience more activities of knowledge sharing because their study are more research oriented compared to the undergraduate student. So, the finding on the previous research that has been conducted by using the respondents from both undergraduate and postgraduate student cannot give a sufficient explanation on the knowledge sharing behavior. Thus, there is a need to conduct a research that is more focus on postgraduate students.

Another topics discussed in previous research were also related to social networking sites (4%), healthcare (2%), research and development (2%), disaster management (1%) and banking (1%).

4. Conclusion

This paper concludes that survey method is the most suitable research method for examining the knowledge sharing behavior. This study is unique in a sense that it included postgraduate students as study group.

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